2

Common Criteria

An Introduction

The CC combines the best aspects of existing criteria for the security evaluation of information technology systems and products.

This document provides a summary of the principal features of the Common Criteria (CC), and is intended for those readers who do not have either the need or time to study the CC in its entirety.

In this document you will find:

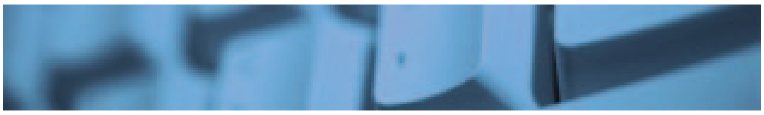
- an overview of the key CC concepts
- an overview of security functionality and the CC component catalogue
- an overview of security assurance and CC evaluation assurance levels
- the relationship between CC, TCSEC and ITSEC assurance levels

Contents

The Common Criteria work is an international initiative by the following organisations: CSE (Canada), SCSSI (France), BSI (Germany), NLNCSA (Netherlands), CESG (UK), NIST (USA) and NSA (USA).

The Common Criteria represents the outcome of efforts to develop criteria for evaluation of IT security that are widely useful within the international community. It is an alignment and development of a number of source criteria*: the existing European, US and Canadian criteria (ITSEC, TCSEC and CTCPEC respectively). The Common Criteria resolves the conceptual and technical differences between the source criteria. It is a contribution to the development of an international standard, and opens the way to worldwide mutual recognition of evaluation results.*

Background



Criteria developments in Canada and European ITSEC countries followed the original US TCSEC work (Orange Book). The US Federal Criteria development was an early attempt to combine these other criteria with the TCSEC, and eventually led to the current pooling of resources towards production of the Common Criteria.

A great strength in the CC development is the close involvement of all the parties with experience of creating the original national Criteria documents. The CC benefits from their accumulated wisdom, and their intent for a fully flexible approach to the standardisation of security functionality and evaluation assurance. The CC has been made sufficiently flexible to permit its evolutionary convergence with the numerous existing national schemes for IT security evaluation, certification and accreditation.

The CC structure also provides great flexibility in the specification of secure products. Consumers and other parties can specify the security functionality of a product in terms of standard *protection profiles*, and independently select the evaluation assurance level from a defined set of seven increasing Evaluation Assurance Levels, from EAL1 up to EAL7.

Version 1.0 of the CC was published for comment in January 1996. Version 2.0 takes account of extensive review and trials during the past two years and was published in May 1998.

Version 2.0 has been adopted by the International Organisation for Standards (ISO) as a Final Committee Draft (FCD) and is expected to become an International Standard (ISO 15408) in 1999.

The CC presents requirements for the IT security of a product or system under the distinct categories of ***functional requirements*** *(CC Part 2) and* ***assurance requirements*** *(CC Part 3). The CC functional requirements define desired security behaviour. Assurance requirements are the basis for gaining confidence that the claimed security measures are effective and implemented correctly.*

General Model

Version 2.0 of the Common Criteria has three parts. A description of the applicability of each part to the three sets of interested parties (Consumers, Developers and Evaluators) is shown below.

	Consumers	Developers	Evaluators
Part 1: Introduction and General Model	For background information and reference purposes	For background information and reference for the development of requirements and formulating security specifications for TOEs.	For background information and reference purposes. Guidance structure for PPs and STs
Part 2: Security Functional Requirements	For guidance and reference when formulating statements of requirements for security functions	For reference when interpreting statements of functional requirements and formulating functional specifications of TOEs	Mandatory statement of evaluation criteria when determining whether TOE effectively meets claimed security functions
Part 3: Security Assurance Requirements	For guidance when determining required levels of assurance	For reference when interpreting statements of assurance requirements and determining assurance approaches of TOEs	Mandatory statement of evaluation criteria when determining the assurance of TOEs and when evaluating PPs and STs

Approach

Confidence in IT security can be gained through actions that may be taken during the process of development, evaluation and operation.

Development

The CC defines a set of IT requirements of known validity which can be used in establishing security requirements for prospective products and systems. The CC also defines the **Protection Profile (PP)** construct which allows prospective consumers or developers to create standardised sets of security requirements which will meet their needs.

The Target of Evaluation (TOE) is that part of the product or system which is subject to evaluation. The TOE security threats, objectives, requirements, and summary specification of security functions and assurance measures together form the primary inputs to the **Security Target (ST)**, which is used by the evaluators as the basis for evaluation.

Evaluation

The principal inputs to evaluation are the Security Target, the set of evidence about the TOE and the TOE itself. The expected result of the evaluation process is a confirmation that the ST is satisfied for the TOE, with one or more reports documenting the evaluation findings.

Operation

Once a TOE is in operation vulnerabilities may surface, or environmental assumptions may require revision. Reports may then be made to the developer requiring changes to the TOE. Following such changes re-evaluation may be required.

Security Framework

The CC discusses security using a hierarchical framework of security concepts and terminology:

Security environment

Laws, organisational security policies etc, which define the context in which the TOE is to be used. Threats present in the environment are also included.

Security objectives

A statement of intent to counter the identified threats and/or satisfy intended organisational security policies and assumptions.

TOE security requirements

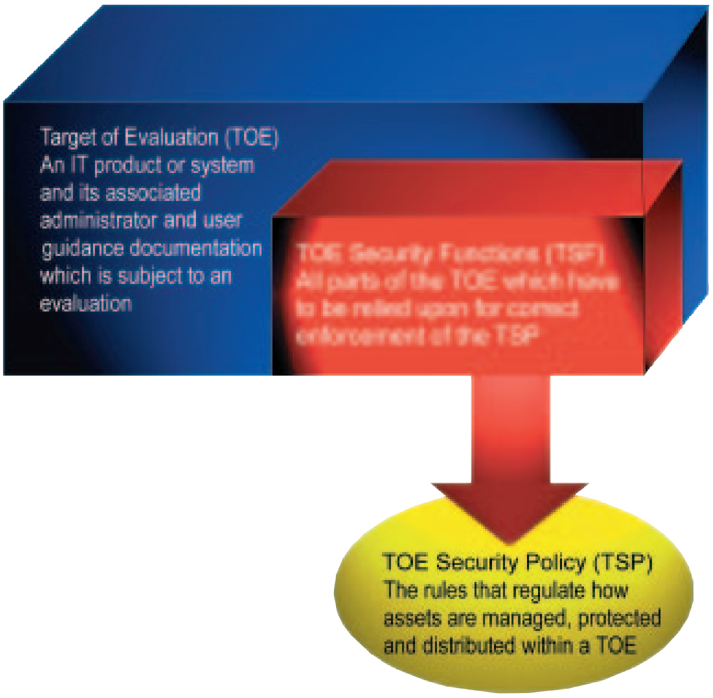
The refinement of the IT security objectives into a set of technical requirements for security functions and assurance, covering the TOE and its IT environment.

TOE security specifications

Define an actual or proposed implementation for the TOE.

TOE implementation

The realisation of a TOE in accordance with its specification.



Target of Evaluation (TOE)
An IT product or system and its associated administrator and user guidance documentation which is subject to an evaluation

TOE Security Functions (TSF)
All parts of the TOE which have to be relied upon for correct enforcement of the TSP

TOE Security Policy (TSP)
The rules that regulate how assets are managed, protected and distributed within a TOE

Key concepts

Protection Profile (PP)

A protection profile defines an implementation-independent set of security requirements and objectives for a category of products or systems which meet similar consumer needs for IT security. A PP is intended to be reusable and to define requirements which are known to be useful and effective in meeting the identified objectives.

The PP concept has been developed to support the definition of functional standards, and as an aid to formulating procurement specifications.

PPs have been developed for firewalls, relational databases, etc, and to enable backwards compatibility with TCSEC B1 and C2 ratings.

Security Target (ST)

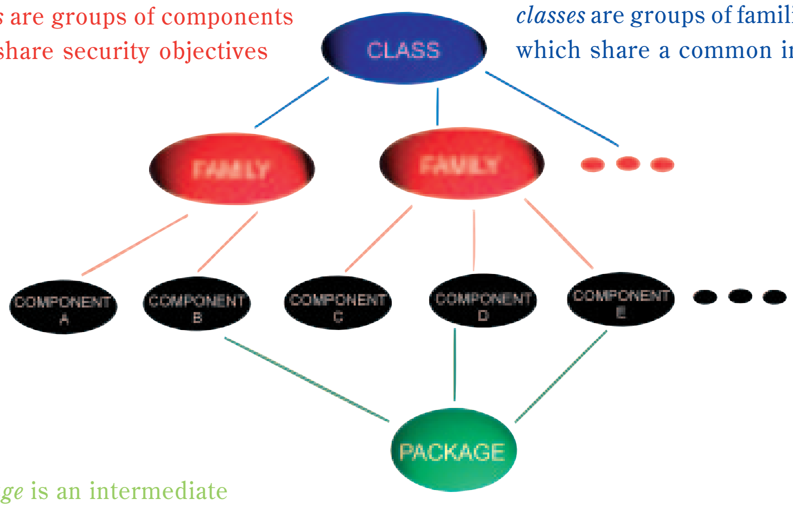
A security target contains the IT security objectives and requirements of a specific identified TOE and defines the functional and assurance measures offered by that TOE to meet stated requirements. The ST may claim conformance to one or more PPs, and forms the basis for an evaluation.

Components

The CC defines a set of constructs which classify security requirements into related sets called components.

families are groups of components which share security objectives

classes are groups of families which share a common intent



a *package* is an intermediate combination of components

The package permits the expression of a set of requirements which meets an identifiable subset of security objectives. A package is intended to be reusable and to define requirements which are known to be useful and effective in meeting the identified objectives. A package may be used in the construction of larger packages, PPs and STs.

Component Operations

CC components may be used exactly as defined in the CC, or they may be tailored through the use of permitted operations in order to meet a specific security policy or counter a specific threat. Each component identifies and defines any permitted operations, the circumstances under which it may be applied and the results of the application. Permitted operations are: *iteration, assignment, selection* and *refinement.*

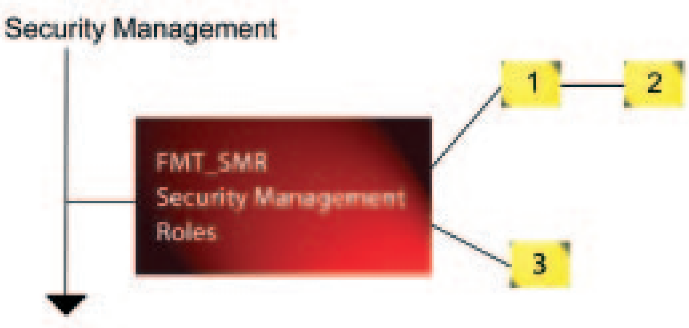
Component Dependencies

Dependencies may exist between components. Dependencies arise when a component is not self-sufficient and relies upon the presence of another component. Dependencies may exist between functional components, between assurance components and (rarely) between functional and assurance components. Each component identifies the dependencies which should be satisfied.

Component Naming Convention

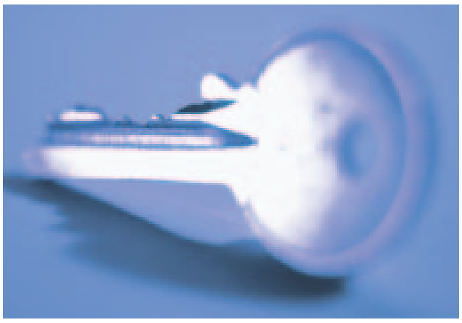
Requirements for a TOE can be constructed from the hierarchy of specifications. The class name is three characters in length (e.g. FMT). Families within each class are named by the addition of an underscore and a further 3 characters (e.g. FMT_SMR). Components within families are numbered (e.g. FMT_SMR.2), as are any elements within the components (e.g. FMT_SMR.2.1).

The diagram shows an example family taxonomy for the FMT_SMR (Security Management Roles) family. It contains three components, with a hierarchy between components 1 and 2.



Aims of the Taxonomy

In defining the security requirements for a trusted product or system the user/developer needs to consider the threats to the IT environment. The CC contains a catalogue of components that the developers of PPs and STs can collate to form the security requirements definition. The organisation of these components into a hierarchy helps the user to locate the right components to combat threats. The user then presents the security requirements in the PPs and the ST of the TOE.



Security functionality

Component Catalogue

Part 2 of the CC contains the catalogue of functional components. A high level overview of the eleven functionality classes in CC Version 2.0 is provided here.

There are some inter-class dependencies, such as the reliance the Data Protection class has upon the correct Identification and Authentication of users in order to be effective.

Audit (FAU)

Security auditing involves recognising, recording, storing and analysing information related to security activities. Audit records are produced by these activities, and can be examined to determine their security relevance. The class is made up of families, which define, amongst other things, requirements for the selection of auditable events, the analysis of audit records, their protection and their storage.

Cryptographic Support (FCS)

This class is used when the TOE implements cryptographic functions. These may be used, for example, to support communications, identification and authentication, or data separation. The two families cover the operational use and management of cryptographic keys.

Communications (FCO)

The communications class provides two families concerned with assuring the identity of a party participating in data exchange. The families are concerned with non-repudiation by the originator and by the recipient of data.

User Data Protection (FDP)

This class contains families specifying requirements relating to the protection of user data. These families address user data within the TOE during import, export and storage, in addition to security attributes related to user data.

Identification and Authentication (FIA)

The requirements for identification and authentication ensure the unambiguous identification of authorised users and the correct association of security attributes with users and subjects. Families in this class deal with determining and verifying user identity, determining their authority to interact with the TOE, and with the correct association of security attributes with the authorised user.

Functional Components

Security functional components are used to express a wide range of security functional requirements within PPs and STs. Components are ordered sets of functional elements, and as discussed on page 7, these sets are grouped into families with common objectives (e.g. Security Audit Trail Protection) and classes with common intent (e.g. Audit). Components other than those defined may be used at the discretion of evaluation authorities. A hierarchy may exist between components.

Component Extensibility

The CC allows the use of functional components not contained in Part 2. Part 3 contains requirements for the evaluation of such components. Note that the use of such extensions may require the prior approval of an evaluation authority.

Security Management (FMT)

This class is used to specify the management of TSF security attributes, data and functions. Different management roles and their interaction, such as separation of capability, can be defined. The class is used to cover the management aspects of other functional classes.

Privacy (FPR)

Privacy requirements provide a user with protection against discovery and misuse of his identity by other users. The families in this class are concerned with anonymity, pseudonymity, unlinkability and unobservability.

Protection of the TOE Security Functions (FPT)

This class is focused on protection of TSF (TOE security functions) data, rather than of user data. The class relates to the integrity and management of the TSF mechanisms and data.

Resource Utilisation (FRU)

Resource utilisation provides three families which support the availability of required resources, such as processing capability and storage capacity. The families detail requirements for fault tolerance, priority of service and resource allocation.

TOE Access (FTA)

This class specifies functional requirements, in addition to those specified for identification and authentication, for controlling the establishment of a user's session. The requirements for TOE access govern such things as limiting the number and scope of user sessions, displaying the access history and the modification of access parameters.

Trusted Path/Channels (FTP)

This class is concerned with trusted communications paths between the users and the TSF, and between TSFs. Trusted paths are constructed from trusted channels, which exist for inter-TSF communications; this provides a means for users to perform functions through a direct interaction with the TSF. The user or TSF can initiate the exchange, which is guaranteed to be protected from modification by untrusted applications.

Taxonomy

The assurance requirements for the CC are defined in Part 3 of the CC. The taxonomy for assurance requirements is similar to that for functional requirements. Part 3 contains two classes containing the assurance requirements for PP and ST evaluations, seven classes from which the evaluation assurance requirements can be chosen, and a class dealing with assurance maintenance. These ten classes are summarised below.

Evaluation of PPs and STs

Assurance classes are provided for the evaluation of PPs (Class APE) and STs (Class ASE). All of the requirements in the relevant class need to be applied for a PP or ST evaluation. The criteria need to be applied in order to find out whether the PP or ST is a meaningful basis for a TOE evaluation.

Protection Profile Evaluation (APE)

The goal here is to demonstrate that the PP is complete, consistent and technically sound. Further, the PP needs to be a statement of the requirements for an evaluatable TOE. The families in this class are concerned with the TOE Description, the Security Environment, the Security Objectives and the TOE Security Requirements.

Security Target Evaluation (ASE)

The goal here is to demonstrate that the ST is complete, consistent and technically sound, and is a suitable basis for the TOE evaluation. The requirements for the families of this class are concerned with the TOE Description, the Security Environment, the Security Objectives, any PP Claims, the TOE Security Requirements and the TOE Summary Specification.

Evaluation Assurance Classes

Configuration Management (ACM)

Configuration management requires that the integrity of the TOE is adequately preserved. Specifically, configuration management provides confidence that the TOE and documentation used for evaluation are the ones prepared for distribution. The families in this class are concerned with the capabilities of the CM, its scope and automation.

Delivery and Operation (ADO)

This class provides families concerned with the measures, procedures and standards for secure delivery, installation and operational use of the TOE, to ensure that the security protection offered by the TOE is not compromised during these events.

Development (ADV)

The families of this class are concerned with the refinement of the TSF from the specification defined in the ST to the implementation, and a mapping from the security requirements to the lowest level representation.

Guidance Documents (AGD)

Guidance documents are concerned with the secure operational use of the TOE, by the users and administrators.

Life Cycle Support (ALC)

The requirements of the families concerned with the life-cycle of the TOE include life-cycle definition, tools and techniques, security of the development environment and the remediation of flaws found by TOE consumers.

Tests (ATE)

This class is concerned with demonstrating that the TOE meets its functional requirements. The families address coverage and depth of developer testing, and requirements for independent testing.

Vulnerability Assessment (AVA)

This class defines requirements directed at the identification of exploitable vulnerabilities, which could be introduced by construction, operation, misuse or incorrect configuration of the TOE. The families identified here are concerned with identifying vulnerabilities through covert channel analysis, analysis of the configuration of the TOE, examining the strength of mechanisms of the security functions, and identifying flaws introduced during development of the TOE.

Assurance Maintenance Class

Maintenance of Assurance (AMA)

This class provides requirements that are intended to be applied after a TOE has been certified against the CC. These requirements are aimed at assuring that the TOE will continue to meet its security target as changes are made to the TOE or its environment.

The class contains four families. The first covers the content of the assurance maintenance plan, which covers the nature of proposed changes and the controls which govern them.

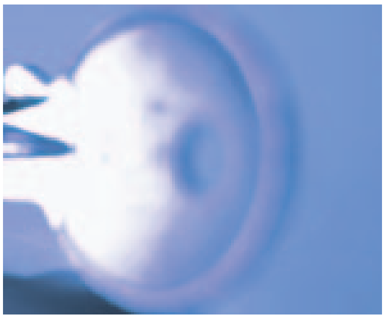
The second family covers the security categorisation of TOE components.

The third and fourth cover the analysis of changes for security impact, and the provision of evidence that procedures are being followed.

This class provides building blocks for the establishment of assurance maintenance schemes.

Evaluation Assurance Levels

The CC contains a set of defined assurance levels constructed using components from the assurance families. These levels are intended partly to provide backward compatibility to source criteria and to provide internally consistent general purpose assurance packages. Other groupings of components are not excluded. To meet specific objectives an assurance level can be augmented by one or more additional components.



Security Assurance

Assurance levels define a scale for measuring the criteria for the evaluation of PPs and STs. Evaluation Assurance Levels (EALs) are constructed from the assurance components detailed opposite. Every assurance family contributes to the assurance that a TOE meets its security claims. EALs provide a uniformly increasing scale which balances the level of assurance obtained with the cost and feasibility of acquiring that degree of assurance. There are seven hierarchically ordered EALs. The increase in assurance across the levels is accomplished by substituting hierarchically higher assurance components from the same assurance family, and by the addition of assurance components from other assurance families.

The seven EALs are as follows:

EAL1	-	functionally tested
EAL2	-	structurally tested
EAL3	-	methodically tested and checked
EAL4	-	methodically designed, tested and reviewed
EAL5	-	semiformally designed and tested
EAL6	-	semiformally verified design and tested
EAL7	-	formally verified design and tested

Further details are provided overleaf, of the meaning and applicability of each EAL.

Backwards Compatibility Objective

The CC EALs have been developed with the goal of preserving the concepts of assurance drawn from the source criteria so that results of previous evaluations remain relevant. Using the table, general equivalency statements are possible, but should be made with caution as the levels do not derive assurance in the same manner, and exact mappings do not exist.

Common Criteria	**US TCSEC**	**European ITSEC**
-	D: Minimal Protection	E0
EAL1	-	-
EAL2	C1: Discretionary Security Protection	E1
EAL3	C2: Controlled Access Protection	E2
EAL4	B1: Labeled Security Protection	E3
EAL5	B2: Structured Protection	E4
EAL6	B3: Security Domains	E5
EAL7	A1: Verified Design	E6

Each of the seven CC Evaluation Assurance Levels is summarised below. EAL1 is the entry level. Up to EAL4 increasing rigour and detail are introduced, but without introducing significantly specialised security engineering techniques. EAL1-4 can generally be retrofitted to pre-existing products and systems.

EAL1 - functionally tested

EALl is applicable where some confidence in correct operation is required, but the threats to security are not viewed as serious. It will be of value where independent assurance is required to support the contention that due care has been exercised with respect to the protection of personal or similar information.

This level provides an evaluation of the TOE as made available to the customer, including independent testing against a specification, and an examination of the guidance documentation provided. It is intended that an EAL1 evaluation could be successfully conducted without assistance from the developer of the TOE, and for minimum outlay. An evaluation at this level should provide evidence that the TOE functions in a manner consistent with its documentation, and that it provides useful protection against identified threats.

Evaluation Assurance Levels

Above EAL4 increasing application of specialised security engineering techniques is required. TOEs meeting the requirements of these levels of assurance will have been designed and developed with the intent of meeting those requirements. At the top level (EAL7) there are significant limitations on the practicability of meeting the requirements, partly due to substantial cost impact on the developer and evaluator activities, and also because anything other than the simplest of products is likely to be too complex to submit to current state-of-the-art techniques for formal analysis.

EAL5 - semiformally designed and tested

EAL5 permits a developer to gain maximum assurance from security engineering based on rigorous commercial development practices, supported by moderate application of specialised security engineering techniques. Such a TOE will probably be designed and developed with the intent of achieving EAL5 assurance. It is likely that the additional costs attributable to EAL5 requirements, relative to rigorous development without application of specialist techniques, will not be large. EAL5 is applicable where the requirement is for a high level of independently assured security in a planned development, with a rigorous development approach, but without incurring unreasonable costs for specialised security engineering techniques.

An EAL5 evaluation provides an analysis which includes all of the implementation. Assurance is supplemented by a formal model and a semiformal presentation of the functional specification and high level design, and a semiformal demonstration of correspondence. The search for vulnerabilities must ensure resistance to penetration attackers with a moderate attack potential. Covert channel analysis and modular design are also required.

EAL2 - structurally tested

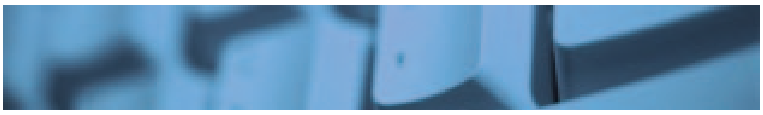
EAL2 requires the co-operation of the developer in terms of the delivery of design information and test results, but should not demand more effort on the part of the developer than is consistent with good commercial practice. As such it should not require a substantially increased investment of cost or time.

EAL2 is applicable in those circumstances where developers or users require a low to moderate level of independently assured security in the absence of ready availability of the complete development record. Such a situation may arise when securing legacy systems, or where access to the developer may be limited.

EAL3 - methodically tested and checked

EAL3 permits a conscientious developer to gain maximum assurance from positive security engineering at the design stage, without substantial alteration of existing sound development practices. It is applicable where the requirement is for a moderate level of independently assured security, with a thorough investigation of the TOE and its development without incurring substantial re-engineering costs.

An EAL3 evaluation provides an analysis supported by testing based on "grey box" testing, selective independent confirmation of the developer test results, and evidence of a developer search for obvious vulnerabilities. Development environment controls and TOE configuration management are also required.



EAL4 - methodically designed, tested and reviewed

EAL4 permits a developer to maximise assurance gained from positive security engineering based on good commercial development practices. Although rigorous, these practices do not require substantial specialist knowledge, skills and other resources. EAL4 is the highest level at which it is likely to be economically feasible to retrofit to an existing product line. It is applicable in those circumstances where developers or users require a moderate to high level of independently assured security in conventional commodity TOEs, and there is willingness to incur some additional security-specific engineering costs.

An EAL4 evaluation provides an analysis supported by the low-level design of the modules of the TOE, and a subset of the implementation. Testing is supported by an independent search for obvious vulnerabilities. Development controls are supported by a life-cycle model, identification of tools, and automated configuration management.

EAL6 - semiformally verified design and tested

EAL6 permits a developer to gain high assurance from application of specialised security engineering techniques in a rigorous development environment, and to produce a premium TOE for protecting high value assets against significant risks. EAL6 is applicable to the development of specialised security TOEs, for application in high risk situations where the value of the protected assets justifies the additional costs.

An EAL6 evaluation provides an analysis which is supported by a modular and layered approach to design, and a structured presentation of the implementation. The independent search for vulnerabilities must ensure resistance to penetration attackers with a high attack potential. The search for covert channels must be systematic. Development environment and configuration management controls are further strengthened.

EAL7 - formally verified design and tested

EAL7 is applicable to the development of security TOEs for application in extremely high risk situations, and/or where the high value of the assets justifies the higher costs. Practical application of EAL7 is currently limited to TOEs with tightly focused security functionality that is amenable to extensive formal analysis.

For an EAL7 evaluation the formal model is supplemented by a formal presentation of the functional specification and high level design, showing correspondence. Evidence of developer "white box" testing and complete independent confirmation of developer test results are required. Complexity of the design must be minimised.

Approach to Evaluation

Protection Profile

The PP describes implementation-independent sets of security requirements for categories of TOEs, and contains a statement of the security problem that a compliant product is intended to solve. It specifies CC functional and assurance requirements components (usually including an EAL), and provides a rationale for the selected functional and assurance components. The PP is structured into the following sections:

Introduction

This contains information necessary to operate a PP registry. It holds the identification and stand-alone abstract of the PP.

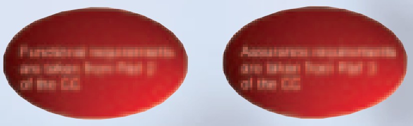
Security Objectives

These reflect the stated intent to counter identified threats and/or comply with any organisational security policies. Security objectives for both the TOE and for the environment are included, and traced back to threats, policies or assumptions.

TOE Description

This provides context for the evaluation. As the description relates to a category of TOEs, the description may be a set of assumptions, and may describe the application context for compliant TOEs.

IT Security Requirements


Functional requirements are taken from Part 2 of the CC
Assurance requirements are taken from Part 3 of the CC

These describe the functional and assurance requirements for compliant TOEs. Functional requirements are normally taken from Part 2. The assurance requirements comprise components from Part 3, and may take the form of predefined packages (e.g. an EAL) optionally augmented with other Part 3 assurance components. In both cases requirements may be extended to include non-CC components where appropriate justification is provided. An optional statement can be included to identify the security requirements for the IT environment. (Where the TOE is a complete TSF with no assertions on the IT environment this last section can be omitted).

TOE Security Environment

This is a narrative statement of the security problem to be solved by the TOE. It describes the security aspects of the environment in which the TOE is intended to be used. It will address:

assumptions: describe the security aspects of the environment in which the TOE is intended to be used, including physical, personnel and connectivity aspects of the environment

threats: the anticipated threats to the IT assets, even those not countered by the TOE. The threat is described in terms of the agent, the attack and the subject of the attack

organisational security policies: identify any rules with which the TOE must comply.

Rationale

In two parts, the *objectives rationale* demonstrates that the security objectives address all of the environmental aspects identified, and that the objectives provide complete coverage. The *requirements rationale* demonstrates that the security requirements are suitable to meet the security objectives.

The evaluation process may be carried out in parallel with, or after, the development of the TOE. The principal input to evaluation is an ST describing the security functions of the TOE, which may reference any PPs to which conformance is claimed. The approach to describing the security functionality of the TOE, in PPs and STs, is defined here.

Security Target

The ST is the basis for the agreement between the TOE developers, consumers, evaluators and evaluation authorities as to what security the TOE offers, and on the scope of the evaluation. The audience for an ST may also include those managing, marketing, purchasing, installing, configuring, operating and using the TOE. The ST is structured into the following sections:

Introduction

This contains the ST identification (and the TOE to which it refers), the ST overview and any CC conformance claim. The overview is aimed at the potential user of the TOE, and is suitable for inclusion in evaluated products lists. The conformance claim states any evaluatable claim of CC conformance for the TOE, and may include PPs or an EAL. A minimum strength of function rating is included where appropriate.

Security Objectives

These address the security objectives of the TOE and its supporting environment. These objectives counter the identified threats and comply with any organisational security policies and assumptions.

TOE Description

This provides context for the evaluation. It is an aid to understanding the security requirements of the TOE and should address the TOE type, its intended usage and its general IT features.

IT Security Requirements

This identifies the TOE IT security requirements, and includes the functional and assurance requirements. A statement of the security requirements of the IT environment is included where appropriate. Requirements which reference a PP need not be repeated in the ST. Minimum strengh of function claims should also be included here if appropriate.

TOE Summary Specification

This provides a high-level definition of the security functions claimed to meet the functional requirements, and the assurance measures taken to meet the assurance requirements. Strengh of function claims for individual functions should be made where appropriate.

TOE Security Environment

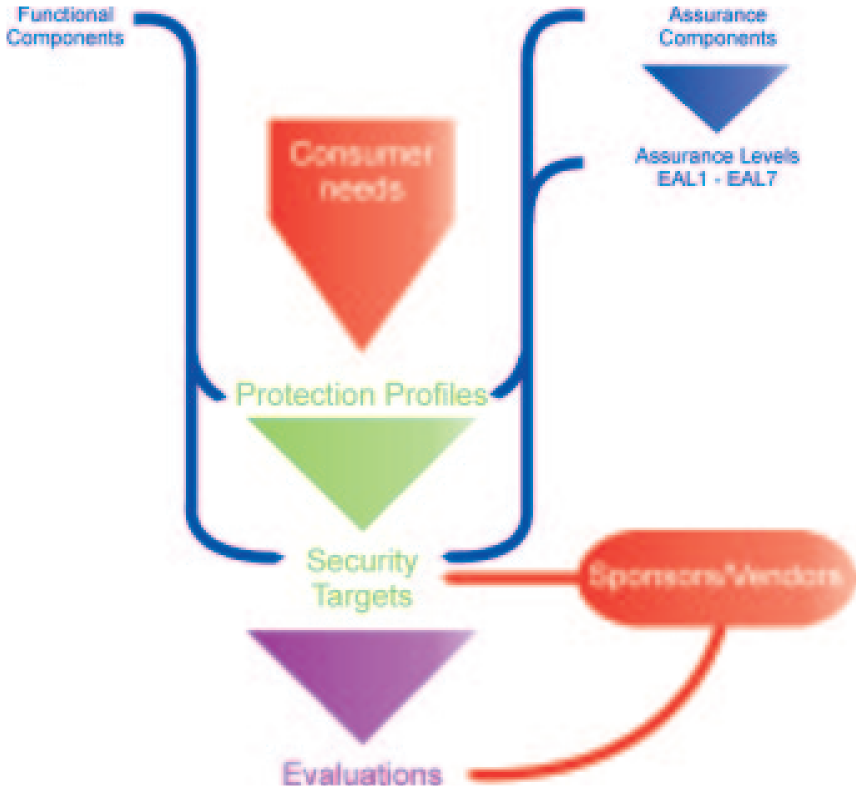
As with the PP, this addresses the threats to the environment, the organisational security policies with which the TOE must comply and the security aspects for the environment in which the TOE will be used (the assumptions).

PP Claims

Where the ST claims that the TOE conforms with the requirements of one or more PPs, an explanation, justification and supporting material is presented here. This includes reference to the PP, a PP tailoring statement, and a PP additions statement.

Rationale

This demonstrates that the ST contains an effective and suitable set of countermeasures, which is complete and cohesive.



Evaluation

An evaluation is an assessment of an IT product or system against defined criteria. A CC evaluation is one using the CC as the basis for evaluating the IT security properties. Evaluations against a common standard facilitate comparability of evaluation outcomes. In order to enhance comparability between evaluation results yet further, evaluations should be performed within the framework of an authoritative evaluation scheme, which sets standards and monitors the quality of evaluations. Such schemes currently exist in several nations.

Distinct stages of evaluation are identified, corresponding to the principal layers of TOE representation:

- **PP evaluation** - carried out against the evaluation criteria for PPs (CC Part 3)
- **ST evaluation** - carried out against the evaluation criteria for STs (CC Part 3)
- **TOE evaluation** - carried out against the evaluation criteria in CC Part 3 using an evaluated ST as the basis.
- **Assurance maintenance** - carried out under schemes based on the requirements in CC Part 3.

Testing, design review and implementation review contribute significantly to reducing the risk that undesired behaviour is present in the TOE. The CC presents a framework in which expert analysis (evaluation) in these areas can take place.

Early versions of the CC contained examples of PPs which had been identified in source criteria, and proposed procedures to establish and control a CC registry of approved PPs. The CC now contains no PP registry - instead a system of linked national registries will be implemented. PPs may be defined by developers when formulating security specifications for TOEs, or by user communities.

CC Protection Profiles

Example PPs

Significant effort has already been expended by governments, industry bodies and commercial organisations in the production of protection profiles. Interim registries have been established to promulgate this information (see foot of page 19). Some examples of the work which has been done so far are:

- A commercial security profile template
- Profiles to replicate TCSEC C2 and B1 requirements
- A role based access control profile
- Smart card profiles
- A relational database profile
- Firewall profiles for packet filters and application gateways

CC Extensibility

The CC is defined to be extensible and it is possible to define functional and assurance requirements not contained in the CC. Extended functional and assurance requirements must be compliant with extensibility criteria in the CC. However, it is recommended that the components defined in the CC are carefully considered before defining such extensions, as use of extended requirements may require the prior approval of an evaluation authority.

For further information...

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✉ *common_criteria@radium.ncsc.mil*
http://www.radium.ncsc.mil/tpep

Interim PP registries may be found on the following Internet Web pages:

http://www.radium.ncsc.mil/tpep/library/protection_profiles/index.html
http://www.cesg.gov.uk/cchtml/ippr/list_by_type.html
http://csrc.nist.gov/cc/pp/pplist.htm

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